Federal Aviation

FY 2018 Aviation Open Data Set - Tableau Visualizations

last updated: 05/02/2019

FY18 Aviation Open Data Set Summary

Overview of the annual Aviation Open Data Set

The annual Federal Aviation Open Data Set is compiled from Federal aircraft inventory, aircraft costs and aircraft utilization (flight hour) data submitted to the Federal Aviation Interactive Reporting System (FAIRS) each fiscal year by Federal agencies (non-DOD) that have aviation programs.

The Office of Management and Budget (OMB) initially established the requirement to develop "…a government-wide aircraft management information system" in the January 18, 1989 version of OMB Circular A-126 *Improving the Management and Use of Government Aircraft*, which was subsequently revised on May 22, 1992 and included additional language that further directed GSA to develop "…generic aircraft information system standards and software".

Federal Government aircraft mission profiles

The Federal Government uses aircraft to support various missions that include the management of natural resources, scientific research, search and rescue, firefighting, marine safety, research and development, and law enforcement activities. The Federal Government owns and operates its own aircraft, and also leases, charters, and rents aircraft through Commercial Aviation Services (CAS) providers.

Types of Data Collected:

The Federal Aviation Open Data Set includes total flight hours and is further broken down to identify Federal (owned aircraft) flight hours as well as Commercial Aviation Services (CAS) flight hours. Additionally, the Federal Aviation Open Data Set also includes total aviation program operating costs, and is also further broken down to identify Federal operating costs (for owned aircraft) and CAS operating costs.

Key Statistics:

Operational Aircraft Inventory

As of 03/12/19 the Federal Operational Aircraft Inventory included 824 operational aircraft, which is a decrease of 35 Federal operational aircraft since FY17:

Airplanes	458 (decrease of 19)
Helicopters	347 (decrease of 17)
Glider	0 (unchanged)
Unmanned Aircraft Systems	19 (increase of 1)
Total aircraft	824 (net decrease of 35)

Aircraft models, manufacturers and average age

The Federal aircraft fleet consists of 136 different models that are produced by 43 manufacturers. Federal operational aircraft, on average, are 29 years old.

Aviation Program Costs

Total FY18 Aviation program operating costs: $1,598,671,335.

Significant Program Increases and Decreases in FY18:

The Federal aviation community (Non-DoD) supported total aircraft utilization of 705,364 hours in FY18, which represents a significant **increase** of 289,061 hours or 69.44% over FY17. Federal utilization totaled 245,257 hours, which was a slight **decrease** of 3,905 hours or 1.57% over FY17, while CAS utilization totaled 460,107 hours, which represents an **increase** of 292,966 hours or 175.28% over FY17.

Federal agencies paid $1,598,671,335 to operate their Federal fleet aircraft and to acquire Commercial Aviation Services (CAS) in FY18. This total was an **increase** of $409,156,651 or 34.40% from FY17. Federal costs totaled $620,778,838 and was a **decrease** of $52,337,101 or 7.78% from FY17, while CAS costs for FY18 totaled $977,892,497 which was an **increase** of $461,493,752 or 89.37% over FY17.

FY18 aircraft utilization data indicated that, of 13 reporting agencies, the Department of Agriculture reported the **largest percentage increase** in utilization hours of 301,491 hours or 294.60% over FY17, while the Environmental Protection Agency reported the **largest percentage decrease** in utilization hours of 209 hours or 80.34% over FY17.

FY18 aircraft cost data indicated that the Department of Agriculture reported the **largest increase** in aviation program costs of $407,624,338 or 143.67%, while the Department of State reported the **largest decrease** in aviation program costs of $62,305,597 or 22.83%.

Overall, Federal utilization and Federal costs are steady, while CAS utilization and costs have significantly increased.

Federal Aviation Dashboard
Cost and utilization
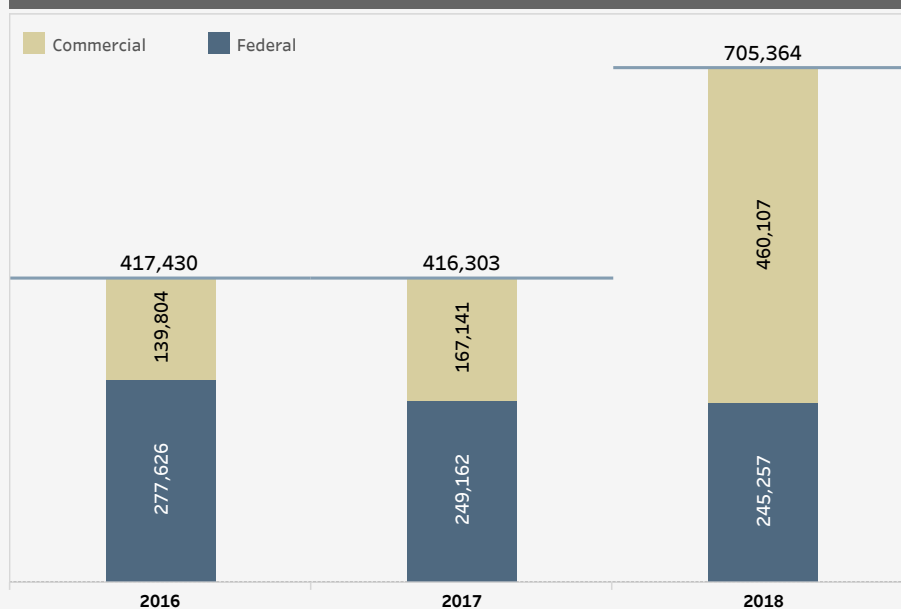
Select Agency
All

Percent Difference in Total Aircraft Utilization Hours
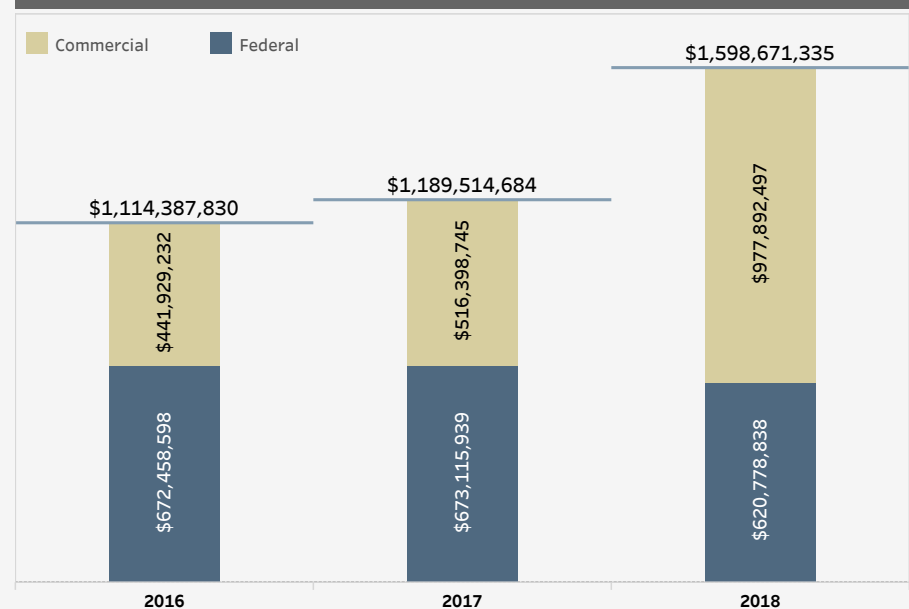#### Commercial + Federal FY 2017 - FY 2018

▲69.44%

Percent Difference in Total Aircraft Cost
Commercial + Federal FY 2017 - FY 2018

▲34.40%

Total Aircraft Utilization Hours
Commercial + Federal FY 2016 - FY 2018

Commercial   Federal

Year	Federal	Commercial	Total
2016	277,626	139,804	417,430
2017	249,162	167,141	416,303
2018	245,257	460,107	705,364

Total Aircraft Cost
Commercial + Federal FY 2016 - FY 2018

Commercial   Federal

Year	Federal	Commercial	Total
2016	$672,458,598	$441,929,232	$1,114,387,830
2017	$673,115,939	$516,398,745	$1,189,514,684
2018	$620,778,838	$977,892,497	$1,598,671,335

Note: The substantial increase in FY18 aircraft utilization and aircraft costs can be attributed to system enhancements made to GSA's Federal Aviation Interactive Reporting System (FAIRS) to more accurately capture total overall aviation costs and total utilization (hours). Beginning in FY18, GSA incorporated two additional mission codes (availability and standby) within the FAIRS information system that enable the reporting of aviation costs and alert hours that are not associated with actual mission flights. The USDA Forest Service largely utilizes Commercial Aviation Services (CAS) where contractors are paid daily availability and standby rates if the aircraft meets the requirements to be dispatched. With these FAIRS system modifications, the FY18 Aviation Open Data Set - Tableau visualizations is more reflective of the USDA Forest Service's total overall costs, flight hours, and alert hours for aviation services as compared to previous Fiscal Year Aviation Open Data sets (reports) that only reflected actual flight time and associated flight costs.

Federal Aviation Dashboard
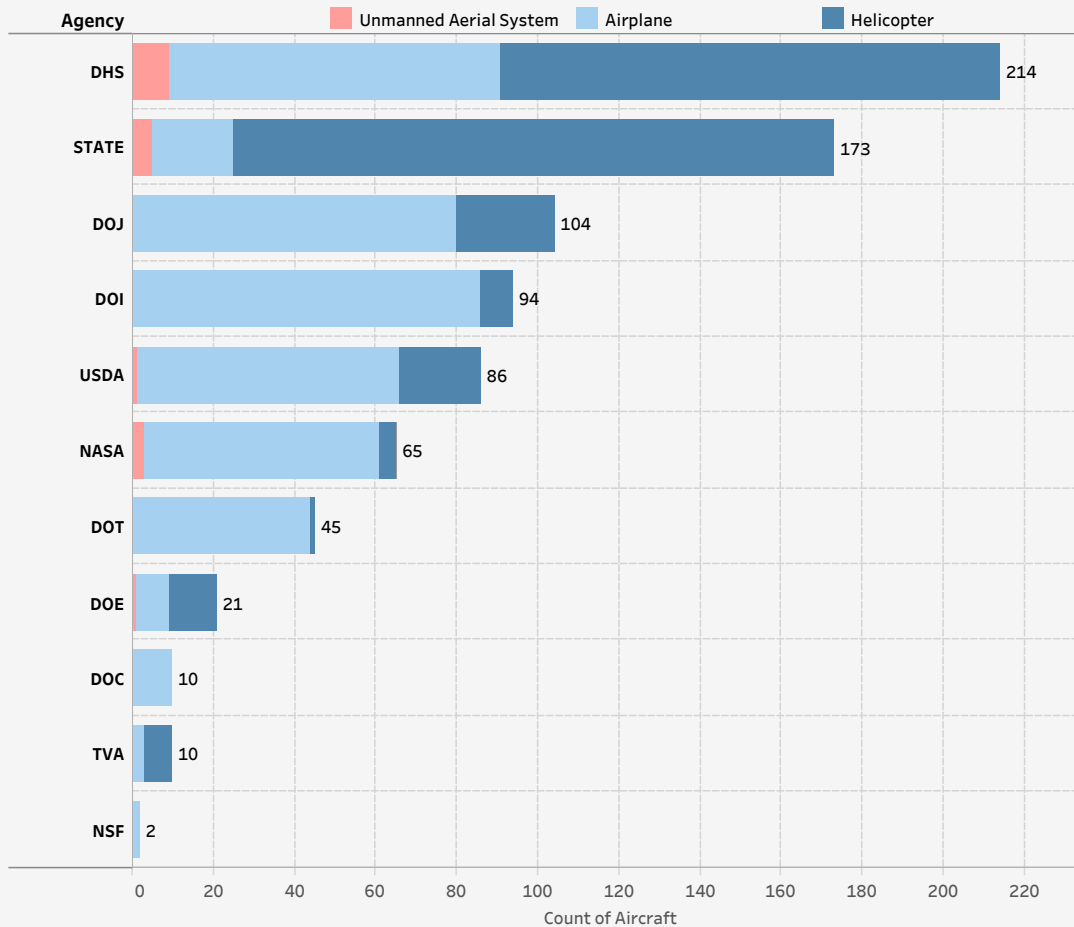## FY 2018 Federal Aircraft Inventory

Select Agency
All

Select Aircraft Category
All

Select Ownership
All

Operational Aircraft Inventory
by Agency

Agency

Legend: ■ Unmanned Aerial System ■ Airplane ■ Helicopter

Agency	Count
DHS	214
STATE	173
DOJ	104
DOI	94
USDA	86
NASA	65
DOT	45
DOE	21
DOC	10
TVA	10
NSF	2

Count of Aircraft (0, 20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 220)

*Click on an agency to filter graph

Operational Aircraft Inventory
by Aircraft Category

Unmanned Aerial System
2.31%

Helicopter
42.11%

Total:
824

Airplane
55.58%
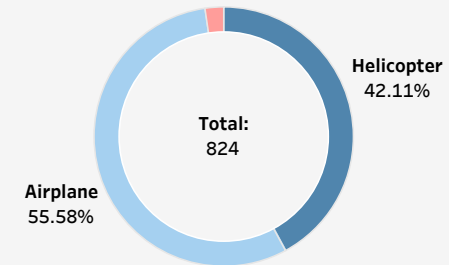
Operational Aircraft Inventory
by Aircraft Ownership

Bailed from		Owned		
Airplane	Helicopter	Airplane	Helicopter	Unmanned Aerial System
6	19	452	328	19
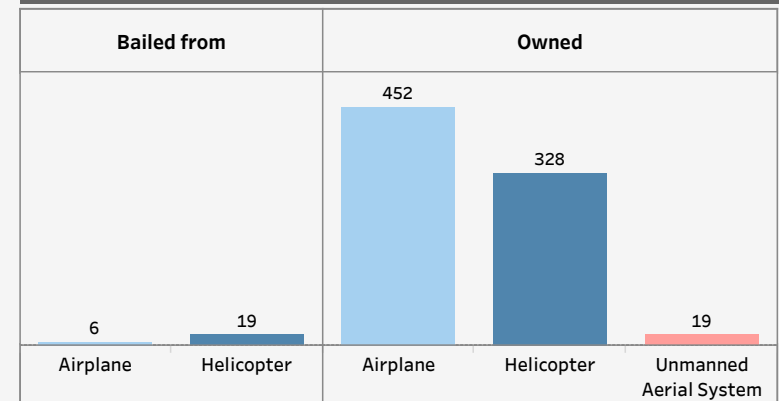
Federal Aviation Dashboard
Aircraft Hours

Select Measure (Utilization Hours*/ Flight Hours)
Utilization Hours*

Select Aircraft Category
All Categories

Select Agency
All Agencies

▲ Indicates an increase in Utilization Hours* From Previous Year
▼ Indicates a reduction in Utilization Hours* From Previous Year
* Utilization refers to total flight hours, Research & Development (R&D) and Alert hours)

Federal Utilization Hours* by Agency FY 2017 - FY 2018

Agency	Percent Difference from Previous Year	FY 2017	FY 2018
DHS	▲ 16.18%	65,964	76,636
DOE	▼-3.06%	50,259	48,722
DOJ	▼-9.25%	28,716	26,059
STATE	▼-28.81%	35,453	25,237
DOT	▼-5.17%	19,335	18,336
USDA	▲ 5.13%	15,381	16,170
DOI	▼-0.59%	15,794	15,674
NASA	▼-11.62%	11,822	10,449
DOC	▲ 53.54%	3,314	5,088
TVA	▼-4.15%	2,409	2,309
NSF	▼-19.52%	715	576

Commercial Utilization Hours* by Agency FY 2017 - FY 2018

Agency	Percent Difference from Previous Year	FY 2017	FY 2018
USDA	▲ 345.80%	86,957	387,660
DOI	▲ 1.03%	43,804	44,257
DHS	▲ 5.13%	13,037	13,706
DOT	▼-25.83%	11,185	8,296
NSF	▼-50.41%	3,101	1,538
NASA	▲ 1.94%	1,365	1,391
DOE	▼-21.66%	1,486	1,164
DOJ	▲ 47.10%	741	1,090
STATE	▲ 79.22%	516	925
EPA	▼-80.34%	260	51
DOC	▼-99.36%	4,675	30
NTSB		15	

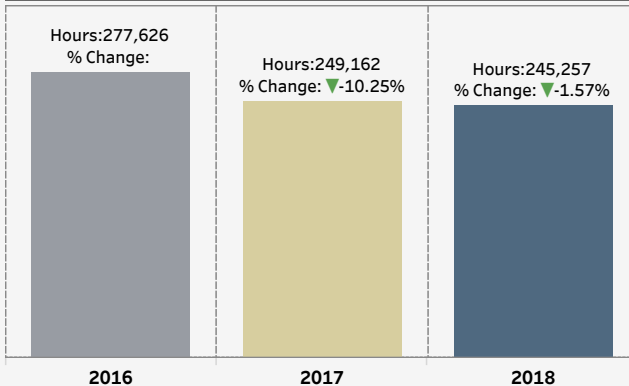### Federal + Commercial Utilization Hours* by Agency FY 2017 - FY 2018

Agency	Percent Difference from Previous Year	FY 2017	FY 2018
USDA	▲ 294.60%	102,338	403,830
DHS	▲ 14.36%	79,001	90,342
DOI	▲ 0.56%	59,598	59,931
DOE	▼-3.59%	51,745	49,887
DOJ	▼-7.83%	29,457	27,149
DOT	▼-12.74%	30,520	26,632
STATE	▼-27.26%	35,968	26,162
NASA	▼-10.21%	13,187	11,840
DOC	▼-35.93%	7,989	5,118
TVA	▼-4.15%	2,409	2,309
NSF	▼-44.62%	3,816	2,113
EPA	▼-80.34%	260	51
NTSB		15	

Federal Utilization Hours* All Agencies FY 2016 - FY 2018

- 2016: Hours: 277,626 % Change:
- 2017: Hours: 249,162 % Change: ▼-10.25%
- 2018: Hours: 245,257 % Change: ▼-1.57%

Commercial Utilization Hours* All Agencies FY 2016 - FY 2018

- 2016: Hours: 139,804 % Change:
- 2017: Hours: 167,141 % Change: ▲19.55%
- 2018: Hours: 460,107 % Change: ▲175.28%

Federal + Commercial Utilization Hours* All Agencies FY 2016 - FY 2018

- 2016: Hours: 417,430 % Change:
- 2017: Hours: 416,303 % Change: ▼-0.27%
- 2018: Hours: 705,364 % Change: ▲69.44%
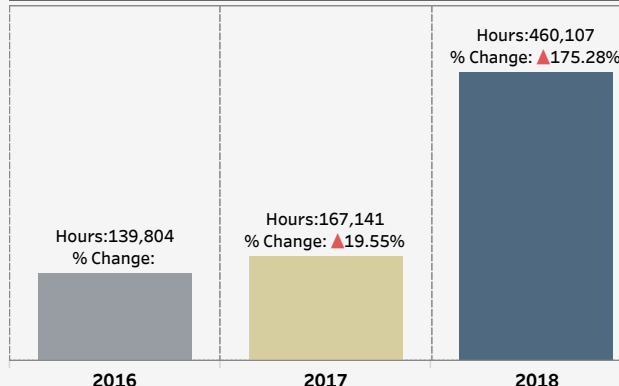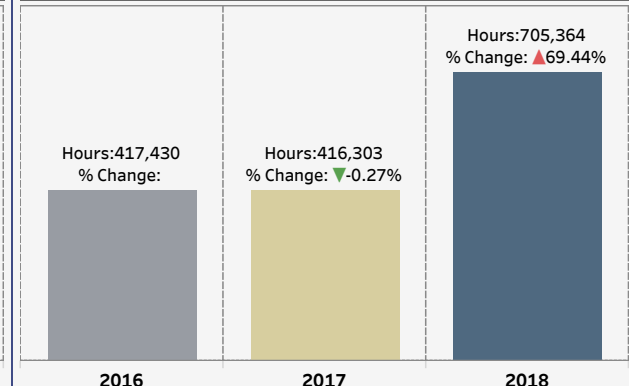
Federal Aviation Dashboard
Mandatory Costs

Select Agency
All

Select Aircraft Category
All

Select Fiscal Year
2018

- 🟩 Crew Cost
- 🟧 Maintenance Cost
- 🟥 Overhead Cost
- ⬛ Fuel, Oil, Lubricants, and Gases Cost

Total Mandatory Costs
FY 2016- FY 2018

Total Aircaft cost

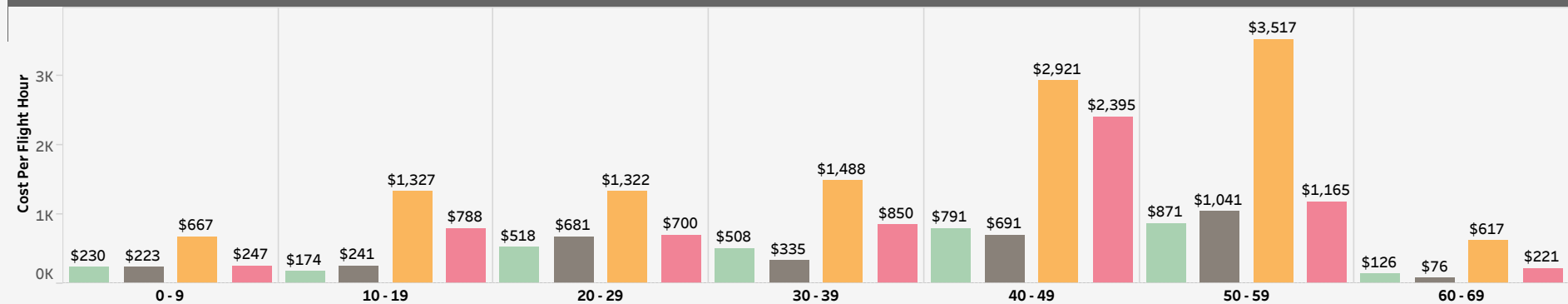|	2016	2017	2018
Crew (green)	$86,252,281	$94,001,815	$83,795,299
Maintenance (orange)	$334,418,732	$339,132,795	$311,697,959
Overhead (pink)	$192,839,939	$185,592,146	$165,363,432
Fuel (gray)	$80,751,033	$72,029,352	$87,716,214
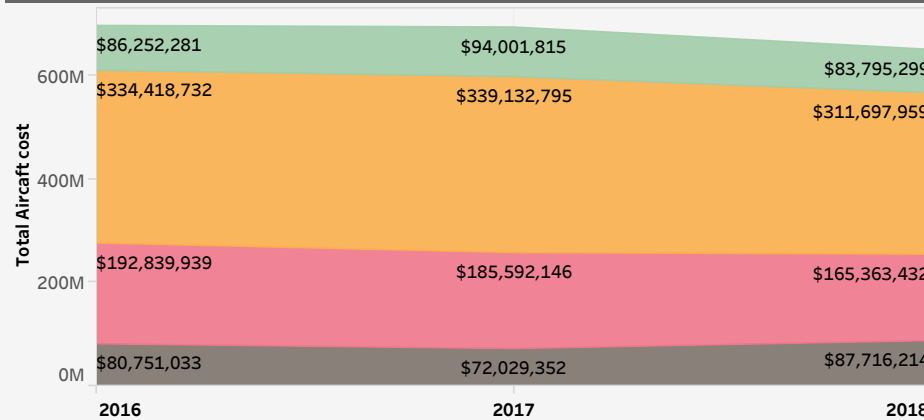
Mandatory Costs per Flight Hour
FY 2016- FY 2018

Costs Per Flight Hour

	2016	2017	2018
Crew	$378	$471	$424
Fuel	$354	$361	$443
Maintenance	$1465	$1698	$1576
Overhead	$845	$929	$836
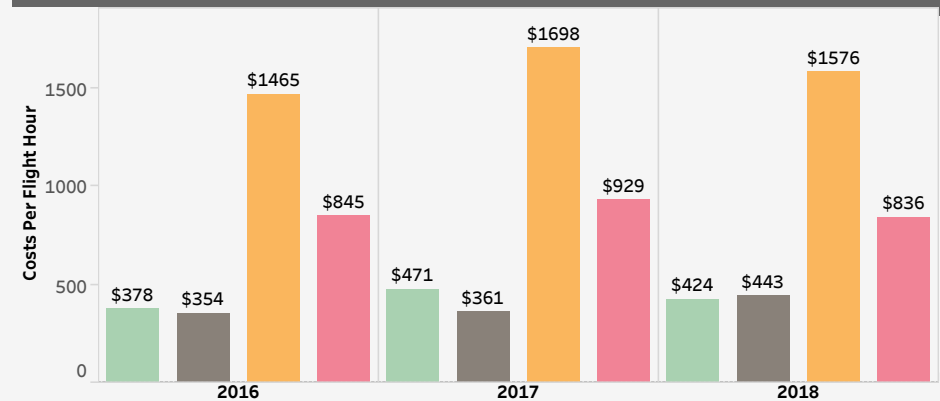
Mandatory Costs per Flight Hour vs. Aircraft Average Age
by Cost Category FY 2018

Cost Per Flight Hour

	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69
Crew	$230	$174	$518	$508	$791	$871	$126
Fuel	$223	$241	$681	$335	$691	$1,041	$76
Maintenance	$667	$1,327	$1,322	$1,488	$2,921	$3,517	$617
Overhead	$247	$788	$700	$850	$2,395	$1,165	$221

*Mandatory Cost: Fuel, Maintenance, Administrative and Overhead costs are required to be captured by each agency in the Federal Aviation Interactive Reporting System (FAIRS) application

* Mandatory Costs per Flight Hour: Shows the average cost per operating flight hour

* Overall Observations:
   1. Mandatory costs are relatively stable FY16 - FY18 with the proportion of/for each type of mandatory costs remaining relatively stable.
   2. Maintenance costs is the largest mandatory cost of the (4) categories.
   3. Maintenance costs per hour for aircraft in the 40-49 year range double over aircraft in the 30-39 year category. Aircraft in the 50-59 year range increase 2½ times per hour.

Federal Aviation Dashboard
Federal Aircraft Cost
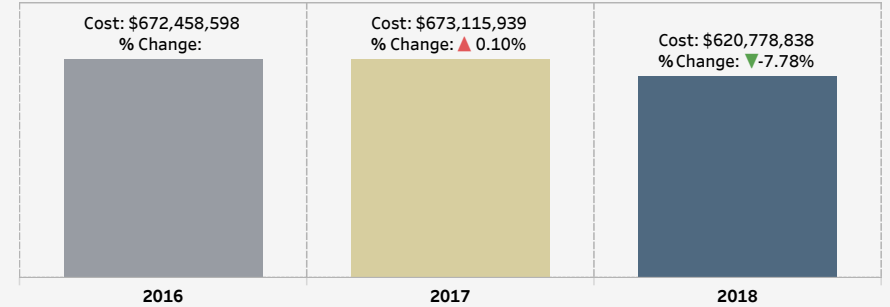
▲ Indicates an increase in Total Cost From Previous Year
▼ Indicates a reduction in Total Cost From Previous Year

Federal Total Cost
by Agency FY 2016 - FY 2018

Agency	Fiscal Year	Percent Difference from Previous Year	Total Cost
			2016 ■ 2017 ■ 2018 ■
STATE	2016		$253,977,987
	2017	▲ 2.96%	$261,494,336
	2018	▼ -24.14%	$198,380,266
NASA	2016		$154,621,964
	2017	▲ 5.51%	$163,134,156
	2018	▼ -7.97%	$150,131,020
DHS	2016		$85,414,246
	2017	▼ -11.86%	$75,287,834
	2018	▲ 31.35%	$98,890,782
DOT	2016		$68,293,144
	2017	▼ -18.77%	$55,477,050
	2018	▼ -10.68%	$49,553,765
DOJ	2016		$33,245,494
	2017	▲ 0.25%	$33,328,087
	2018	▲ 7.59%	$35,858,932
USDA	2016		$20,376,653
	2017	▲ 55.25%	$31,635,695
	2018	▼ -6.08%	$29,711,595
DOE	2016		$20,096,607
	2017	▲ 11.48%	$22,404,378
	2018	▲ 5.69%	$23,679,708
DOI	2016		$11,229,410
	2017	▲ 38.52%	$15,554,739
	2018	▼ -27.97%	$11,204,843
DOC	2016		$11,462,230
	2017	▼ -32.21%	$7,770,345
	2018	▲ 77.54%	$13,795,090
NSF	2016		$4,565,615
	2017	▲ 9.16%	$4,983,884
	2018	▲ 22.13%	$6,086,995
TVA	2016		$9,175,248
	2017	▼ -77.71%	$2,045,435
	2018	▲ 70.42%	$3,485,842

Federal Total Cost
All Agencies FY 2016 - FY 2018

Cost: $672,458,598
% Change:
2016

Cost: $673,115,939
% Change: ▲ 0.10%
2017

Cost: $620,778,838
% Change: ▼ -7.78%
2018

Federal Total Cost
All Agencies By Cost Category FY 2016 - FY 2018

Cost Category
- ■ Cost Offsets
- ■ Crew Cost
- ■ Maintenance Cost
- ■ Overhead Cost
- ■ Fuel, Oil, Lubricants, and Gases Cost
- ■ Flight Support
- ■ Insurance/Litigat
- ■ Other
- ■ Null

Cost measure

	2016	2017	2018
Crew Cost	$86,252,281	$94,001,815	$83,795,299
Maintenance Cost	$334,418,732	$339,132,795	$311,697,959
Overhead Cost	$192,839,939	$185,592,146	$165,363,432
Fuel, Oil, Lubricants, and Gases Cost	$80,751,033	$72,029,352	$87,716,214

Fiscal Year

Federal Aviation Dashboard
Commercial Aircraft Cost

▲ Indicates an increase in Total Cost From Previous Year
▼ Indicates a reduction in Total Cost From Previous Year

Commercial Total Cost
by Agency FY 2016 - FY 2018

Agency	Fiscal Year	Percent Difference from Previous Year	Total Cost
USDA	2016		$180,564,952
	2017	▲ 39.61%	$252,084,927
	2018	▲ 162.46%	$661,633,365
DOI	2016		$141,719,053
	2017	▼ -19.17%	$114,556,831
	2018	▲ 29.62%	$148,485,718
DHS	2016		$86,975,811
	2017	▲ 26.35%	$109,892,751
	2018	▲ 22.37%	$134,476,817
STATE	2016		$10,158,045
	2017	▲ 12.05%	$11,381,845
	2018	▲ 7.10%	$12,190,318
DOT	2016		$11,073,008
	2017	▲ 17.67%	$13,029,691
	2018	▼ -29.02%	$9,248,711
NSF	2016		$5,808,841
	2017	▲ 47.36%	$8,560,033
	2018	▼ -39.42%	$5,185,394
NASA	2016		$1,900,168
	2017	▲ 111.76%	$4,023,747
	2018	▲ 23.35%	$4,963,271
DOE	2016		$1,468,716
	2017	▲ 62.26%	$2,383,131
	2018	▼ -30.90%	$1,646,747
EPA	2016		$2,260,638
	2017	▼ -85.80%	$321,110
	2018	▼ -87.85%	$39,025
DOC	2017		$164,679
	2018	▼ -85.95%	$23,131

Legend: ▇ 2016 ▇ 2017 ▇ 2018

Commercial Total Cost
All Agencies FY 2016 - FY 2018

Cost: $441,929,232
% Change:
2016

Cost: $516,398,745
% Change: ▲ 16.85%
2017

Cost: $977,892,497
% Change: ▲ 89.37%
2018

Note: The substantial increase in FY18 aircraft utilization and aircraft costs can be attributed to system enhancements made to GSA's Federal Aviation Interactive Reporting System (FAIRS) to more accurately capture total overall aviation costs and total utilization (hours). Beginning in FY18, GSA incorporated two additional mission codes (availability and standby) within the FAIRS information system that enable the reporting of aviation costs and alert hours that are not associated with actual mission flights. The USDA Forest Service largely utilizes Commercial Aviation Services (CAS) where contractors are paid daily availability and standby rates if the aircraft meets the requirements to be dispatched. With these FAIRS system modifications, the FY18 Aviation Open Data Set - Tableau visualizations is more reflective of the USDA Forest Service's total overall costs, flight hours, and alert hours for aviation services as compared to previous Fiscal Year Aviation Open Data sets (reports) that only reflected actual flight time and associated flight costs.

Federal Aviation Dashboard
Federal + Commercial Aircraft Cost

Select Measure (Total Cost/ Cost per Hour)
Total Cost

▲ Indicates an increase in Total Cost From Previous Year
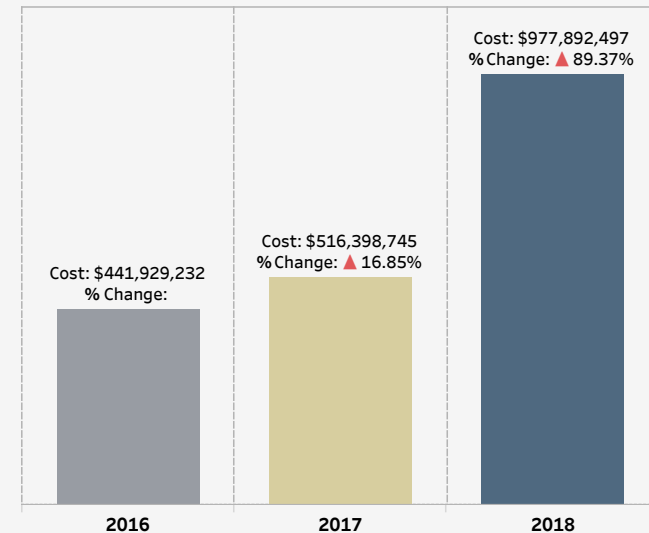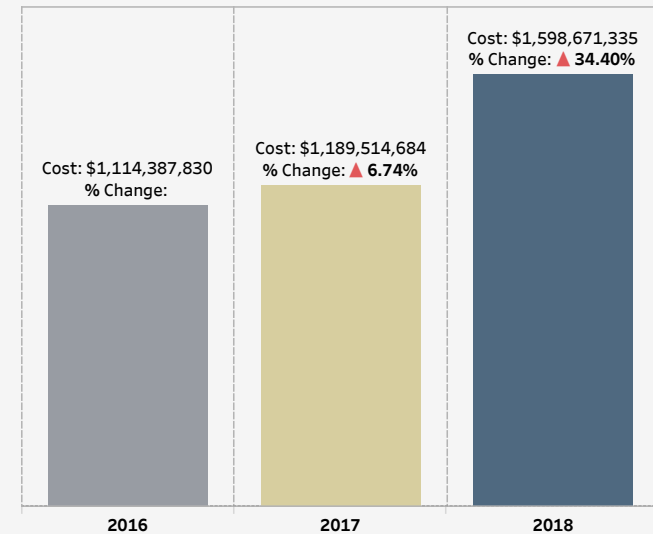▼ Indicates a reduction in Total Cost From Previous Year

Federal + Commercial Total Cost
by Agency FY 2016 - FY 2018

Agency	Fiscal Year	Percent Difference from Previous Year	Total Cost
USDA	2016		$200,941,605
	2017	▲ 41.20%	$283,720,622
	2018	▲ 143.67%	$691,344,960
STATE	2016		$264,136,032
	2017	▲ 3.31%	$272,876,181
	2018	▼ -22.83%	$210,570,584
DHS	2016		$172,390,057
	2017	▲ 7.42%	$185,180,585
	2018	▲ 26.02%	$233,367,599
NASA	2016		$156,522,132
	2017	▲ 6.80%	$167,157,903
	2018	▼ -7.22%	$155,094,291
DOI	2016		$152,948,463
	2017	▼ -14.93%	$130,111,570
	2018	▲ 22.73%	$159,690,561
DOT	2016		$79,366,152
	2017	▼ -13.68%	$68,506,741
	2018	▼ -14.17%	$58,802,476
DOJ	2016		$33,245,494
	2017	▲ 0.25%	$33,328,087
	2018	▲ 7.59%	$35,858,932
DOE	2016		$21,565,323
	2017	▲ 14.94%	$24,787,509
	2018	▲ 2.17%	$25,326,455
NSF	2016		$10,374,456
	2017	▲ 30.55%	$13,543,917
	2018	▼ -16.77%	$11,272,389
DOC	2016		$11,462,230
	2017	▼ -30.77%	$7,935,024
	2018	▲ 74.14%	$13,818,221
TVA	2016		$9,175,248
	2017	▼ -77.71%	$2,045,435
	2018	▲ 70.42%	$3,485,842
EPA	2016		$2,260,638
	2017	▼ -85.80%	$321,110
	2018	▼ -87.85%	$39,025

Legend: 2016, 2017, 2018

Federal + Commercial Total Cost
All Agencies FY 2016 - FY 2018

- 2016 — Cost: $1,114,387,830, % Change:
- 2017 — Cost: $1,189,514,684, % Change: ▲ 6.74%
- 2018 — Cost: $1,598,671,335, % Change: ▲ 34.40%

Note: The substantial increase in FY18 aircraft utilization and aircraft costs can be attributed to system enhancements made to GSA's Federal Aviation Interactive Reporting System (FAIRS) to more accurately capture total overall aviation costs and total utilization (hours). Beginning in FY18, GSA incorporated two additional mission codes (availability and standby) within the FAIRS information system that enable the reporting of aviation costs and alert hours that are not associated with actual mission flights. The USDA Forest Service largely utilizes Commercial Aviation Services (CAS) where contractors are paid daily availability and standby rates if the aircraft meets the requirements to be dispatched. With these FAIRS system modifications, the FY18 Aviation Open Data Set - Tableau visualizations is more reflective of the USDA Forest Service's total overall costs, flight hours, and alert hours for aviation services as compared to previous Fiscal Year Aviation Open Data sets (reports) that only reflected actual flight time and associated flight costs.